

**Heliomagnetic Latitude Dependence of the Heliospheric
Magnetic Field: Ulysses and ICE Observations**

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In a previous study, [Burton et al., 1995] ICE and IMP-8 magnetic field data from 1984-88 were analyzed in a heliomagnetic coordinate system defined by the orientation of the solar magnetic dipole. The heliomagnetic latitude dependence of the radial component of the magnetic field (B_r) was investigated in a range of latitudes from $\pm 60^\circ$. The observations were compared with several solar magnetic field models. The radial component of the magnetic field was found to reverse sign abruptly at the sector boundary consistent with the current sheet model of Wolfson [1985] and the MHD model of Pneuman and Kopp [1971] but inconsistent with source surface models [Hocksema, 1985]. No evidence of an asymmetry in the field strength was found between the northern and southern hemispheres contrary to previous studies of interplanetary data [Luhmann et al., 1985 and Burton et al., 1990]. The study revealed evidence for a slight positive gradient in magnitude (~ 0.03 nT/ $^\circ$) toward the pole, as the Pneuman and Kopp model predicts. The same approach has been used in this study to examine Ulysses data from 1994-5 as the spacecraft traveled from the southern to the northern solar pole. A comparison will be made with the data available from the ICE spacecraft. Throughout part of 1995, ICE and Ulysses remained aligned in longitude and ICE remained in the ecliptic plane. For two intervals, April and July through September of 1995, ICE obtained enhanced tracking from the Deep Space Network. Implications for solar magnetic field models will be discussed.

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